

What is claimed is:

1. A method of obtaining a data stream comprising:

requesting a plurality of sources, each of which
5 contains a copy of the data stream, to send different
respective segments of the data stream to a specified
destination; and

dynamically adjusting the relative number of segments
of the data stream that each of the sources should
10 subsequently send.

2. The method of claim 1 wherein segments of the data
stream received from any particular source are received
over a route that differs from routes over which segments
15 of the data stream are received from other ones of the
sources.

3. The method of claim 1 including receiving additional
respective segments of the data stream from the sources
20 after adjusting the relative number of segments to be sent
by each source, wherein the additional received segments
represent at least part of a portion of the data stream not
previously received in response to the request.

4. The method of claim 3 wherein adjusting the relative
number of segments is based on prior throughputs of
respective connections associated with the sources.

5. The method of claim 1 including repeatedly adjusting
30 the relative number of segments of the data stream that the
sources should send.

6. The method of claim 5 including assembling the received segments to obtain substantially the entire data stream.

5 7. The method of claim 1 wherein at least some segments of the data stream are received over a high latency network.

8. A method of obtaining a data stream comprising:
10 requesting a plurality of sources, each of which contains a copy of the data stream, to send different respective segments of the data stream and sending a first pattern to each of the sources;
receiving the different respective segments of the
15 data stream from the sources, wherein the respective segments of the data stream received from each source depend on the first pattern;
sending a modified pattern to the sources during receipt of the respective segments of the data stream from
20 the sources; and
receiving additional different respective segments of the data stream from the sources based on the modified pattern.

25 9. The method of claim 8 including calculating the modified pattern based on prior throughputs of connections to the sources.

10. The method of claim 9 including repeatedly modifying
30 the pattern and receiving additional different respective segments of the data stream until substantially all segments of the data stream are received.

11. The method of claim 10 including assembling the received segments to obtain substantially the entire data stream.

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12. The method of claim 8 wherein the respective segments of the data stream are non-overlapping.

13. The method of claim 8 wherein sequential groups of one or more elements in the pattern correspond to sequential segments of the data stream.

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14. The method of claim 13 wherein each segment comprises a data block.

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15. The method of claim 8 wherein respective groups of one or more elements in the pattern identify respective particular ones of the sources, and wherein the respective positions of the groups within the pattern indicate which segments of the data stream are to be sent by each particular source.

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16. A method of providing a data stream comprising:
receiving requests to send respective segments of the data stream to a particular destination over different routes; and

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sending the segments of the data stream over the different routes, wherein segments of the data stream sent over any particular route differ from segments sent over other ones of the routes.

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17. The method of claim 16 including dynamically adjusting the relative number of segments of the data stream sent over each of the routes.

5 18. The method of claim 16 including receiving a pattern associated with the requests, wherein the pattern identifies the particular segments to be sent over the different routes.

10 19. The method of claim 18 wherein the pattern includes groups of one or more element, each group identifying a particular one of the routes, and wherein respective positions of element groups within the pattern that correspond to a particular route identify which segments of
15 the data stream are to be sent along the particular route.

20 20. The method of claim 19 including determining whether individual segments of the data stream should be sent along the particular route, wherein the individual segments are
20 considered in a predetermined sequential order.

21. The method of claim 16 including repeatedly adjusting the relative number of segments the data stream that should be sent over each of the routes.

25 22. The method of claim 16 including receiving the segments sent over the different routes and assembling the received segments to obtain substantially the entire data stream.

30 23. A system for transferring a data stream comprising:
a device capable of executing an application program;

a module associated with the device and configured to intercept a request for the data stream generated by the application program; and

5 a plurality of sources each storing a copy of the data stream;

wherein the module is configured to request each of the sources to send different respective segments of the data stream and, prior to receiving all segments of the data stream, to adjust dynamically the relative number of
10 segments of the data stream that each of the sources should send.

24. The system of claim 23 wherein the module is configured to adjust the relative number of segments to be
15 sent by the sources based on prior throughputs of respective connections associated with the sources.

25. The system of claim 23 wherein the module is configured to repeatedly adjust the relative number of
20 segments of the data stream that the sources should send.

26. The system of claim 23 wherein the module is configured to assemble the received segments into substantially the entire data stream and to transfer the
25 data stream to the application program.

27. The system of claim 23 wherein the module is configured to send a first pattern to the sources to identify the segments that each source initially should
30 send, and wherein the module is further configured to send another pattern to indicate the adjusted relative number of segments of the data stream that the sources should send.

28. The system of claim 27 wherein each pattern includes groups of one or more elements, each group identifying a particular one of the sources, and wherein respective
5 positions of element groups within a particular pattern that correspond to the particular source identify which segments of the data stream are to be sent by the particular source.

10 29. The system of claim 23 wherein the segments sent by the sources are non-overlapping.

30. A system for transferring a data stream comprising:
a destination device;
15 a module associated with the destination device and configured to intercept a request for the data stream generated by the destination;
a source of a data stream; and
a plurality of servers located along different routes
20 that can couple the destination device to the source;
wherein the module is configured to request each of the servers to route different respective segments of the data stream to the destination device and, prior to receiving all segments of the data stream, to adjust
25 dynamically the relative number of segments of the data stream that each of the servers should route.

31. The system of claim 30 wherein the servers are configured to route the request to the source, and wherein
30 the source is configured to send the segments of the data stream over the different routes in response to the requests from the servers, wherein segments of the data

stream sent over any particular route differ from segments sent over other ones of the routes.

32. The system of claim 31 wherein the module is
5 configured to adjust the relative number of segments to be routed through the servers based on prior throughputs of the routes associated with the servers.

33. The system of claim 30 wherein the module is
10 configured to repeatedly adjust the relative number of segments of the data stream to be routed through the servers.

34. The system of claim 30 wherein the module is
15 configured to assemble received segments into substantially the complete data stream and to transfer the data stream to the destination device.

35. The system of claim 30 wherein the module is
20 configured to send a first pattern to the servers to identify the segments that should initially be sent over the routes, and wherein the module is further configured to send another pattern to identify the adjusted relative number of segments of the data stream that the should be
25 sent over the routes.

36. The system of claim 35 wherein each pattern includes groups of one or more elements, each group identifying a particular one of the routes, and wherein respective
30 positions of element groups within a particular pattern that correspond to the particular routes identify which

segments of the data stream are to be sent over the particular source.

37. An article comprising a computer-readable medium that stores computer-executable instructions for causing a computer system to:

request a plurality of sources, each of which contains a copy of a data stream, to send different respective segments of the data stream; and

prior to receiving all segments of the data stream, dynamically adjust the relative number of segments of the data stream that each of the sources should subsequently send.

38. The article of claim 37 including instructions for causing the computer system to adjust the relative number of segments based on prior throughputs of respective connections associated with the sources.

39. The article of claim 37 including instructions for causing the computer system to repeatedly adjust the relative number of segments of the data stream that the sources should send.

40. The article of claim 39 including instructions for causing the computer system to assemble the received segments to obtain substantially the complete data stream.

41. An article comprising a computer-readable medium that stores computer-executable instructions for causing a computer system to:

send segments of a data stream from a particular source containing a copy of the data stream in response to a request for the segments based on a first pattern; and
 send additional segments of the data stream from the particular source in accordance with a modified pattern,
 wherein segments of the data stream are sent in accordance with the first pattern at least until receipt of the modified pattern.

42. The article of claim 41 wherein each pattern includes groups of one or more elements, each group identifying a particular one of a plurality of sources for the data stream, and wherein respective positions of element groups within the pattern that correspond to the particular source identify which segments of the data stream are to be sent by the particular source.

43. The article of claim 42 including instructions for causing the computer system to determine whether individual segments of the data stream should be sent from the particular source, wherein the individual segments are considered in a predetermined sequential order.

44. An article comprising a computer-readable medium that stores computer-executable instructions for causing a computer system to:

send segments of a data stream to a particular destination over different routes in response to requests for the segments, wherein segments of the data stream sent over any particular route differ from segments sent over other ones of the routes; and

dynamically adjust the relative number of segments of the data stream sent over each of the routes.

45. The article of claim 44 including instructions for causing the computer system to send the segments based on a received pattern, wherein the pattern identifies the particular segments to be sent over the different routes.

46. The article of claim 45 wherein the pattern includes groups of one or more elements, each group identifying a particular one of the routes, and wherein respective positions of element groups within the pattern that correspond to a particular route identify which segments of the data stream are to be sent along the particular route.

47. The article of claim 46 including instructions for causing the computer system to determine whether individual segments of the data stream should be sent along the particular route, wherein the individual segments are considered in a predetermined sequential order.

48. The article of claim 44 including instructions for causing the computer system to repeatedly adjust the relative number of segments the data stream that should be sent over the different routes.